

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A system for automatic configuration upon installation of a network printer, wherein the network printer is associated with printer description files, a driver, a spooler, and a port monitor, the system comprising:

bi-directional application program interfaces associated with the spooler for allowing the driver to generate a request and a response, the bi-directional application program interfaces configured to seek a list of one or more installable features upon installation of the network printer;

a syntax within the printer description files for representing and associating the request and the response with a print feature, the syntax including one or more extensions to the printer description files;

extension files stored in the driver for relating bi-directional values and printer values, the bi-directional values configured to enable a client to generate a request and interpret a response;

a notification infrastructure controlled by the port monitor for providing a bi-directional notification of configuration changes to the driver and selected applications; and

a computer storage medium for storing information related to automatic configuration upon installation of ~~the~~ network printer,

wherein the bi-directional application program interfaces are configured to perform an auto-configuration of the system upon installation of the network

printer, the auto-configuration including configuration of the one or more installable features and the auto-configuration capable of being performed independent of input from one or more users at one or more computers.

2. (original) The system of claim 1, wherein the notification infrastructure includes a drive printer event mechanism for informing the driver of a configuration change.

3. (original) The system of claim 1, wherein the notification infrastructure includes a find next printer change notification for allowing an application to monitor and receive configuration changes automatically.

4. (original) The system of claim 1, wherein the syntax additionally comprises a plurality of keywords including a response type keyword for designating a bi-directional response type and a response data keyword for mapping between features of the network printer.

5. (original) The system of claim 1, wherein the syntax provides tools for providing updates at a global level, at an option level, and at a feature level.

6. (original) The system of claim 1, further comprising independent hardware vendor extensions for enumerating specific features provided by a manufacturer.

7. (original) The system of claim 1, wherein the bi-directional application program interfaces provide tools for supporting a get action, a set action, and an enumerate action.

8. (original) The system of claim 1, wherein port monitor includes a mechanism for retrieving data from a network printer database and for accessing the extension files to transform the data.

9. (original) The system of claim 8, wherein the bi-directional application program interfaces provide a mechanism for returning the data retrieved by the port monitor.

10. (currently amended) A system for facilitating client retrieval of bi-directional information upon installation of a network device, the system comprising:

a set of bi-directional constructs within a printer description file, the bi-directional constructs configured to seek a list of one or more installable features upon installation of the network device;

a port monitor for receiving the bi-directional constructs, for retrieving data from the network device in accordance with the bi-directional constructs, transforming the data into an appropriate format, creating a channel, and sending the transformed data;

a spooler including a mechanism for receiving installation notifications over the created channel from the port monitor and routing the installation notifications to selected applications; and

a computer storage medium for storing information related to automatic configuration upon installation of a network printer,

wherein the bi-directional constructs are configured to perform an auto-configuration of the system upon installation of the network printer, the auto-

configuration including configuration of the one or more installable features[[,]]
and the auto-configuration capable of being performed independent of input from
of one or more users at one or more client computers,

wherein the auto-configuration provides for automatically updating the
system upon installation of the network printer—~~without~~ independent of user
intervention,

wherein the bi-directional constructs are configured to monitor and
recognize an acquiring of additional printer features, and

wherein the additional printer features are automatically updated when
recognized.

11. (original) The system of claim 10, wherein spooler comprises a drive
printer event mechanism for informing a driver of a configuration change.

12. (original) The system of claim 10, wherein the spooler comprises a
find next printer change notification for allowing an application to monitor and receive
configuration changes automatically.

13. (original) The system of claim 10, wherein the set of bi-directional
constructs includes a bi-directional query construct and a bi-directional response construct.

14. (original) The system of claim 13, wherein the printer description file
comprises a plurality of keywords including a response type keyword for designating a bi-
directional response type and a response data keyword for mapping between features of the
network printer.

15. (original) The system of claim 14, wherein the bi-directional constructs and the keywords form a syntax providing tools for making automatic updates at a global level, at an option level, and at a feature level.

16. (original) The system of claim 10, further comprising independent hardware vendor extensions for enumerating specific features provided by a manufacturer.

17. (original) The system of claim 10, further comprising bi-directional application program interfaces within the spooler for allowing transmittal of a bi-directional request and a bidirectional response.

18. (original) The system of claim 17, wherein the bi-directional application program interfaces provide tools for supporting a get action, a set action, and an enumerate action.

19. (original) The system of claim 10, wherein the port monitor includes a mechanism for retrieving data from a network printer database and for accessing extension files within a driver to transform the received data.

20. (original) The system of claim 19, wherein the bi-directional application program interfaces provide a mechanism for returning the data retrieved by the port monitor.

21. (currently amended) A method for automatically configuring a system upon installation of a network printer within the system, wherein the system includes printer description files, a driver, a spooler, and a port monitor, the method comprising:

getting, upon installation of the network printer, a list of installable features and corresponding bi-directional requests from the printer description files;

calling bi-directional application program interfaces from the spooler to query for a current configuration of the installable features;

mapping bi-directional schema to a printer-specific protocol;

generating and routing a bi-directional notification;

mapping bi-directional responses to a feature from the printer description file; and

updating an application with a current configuration,

wherein updating the application with the current configuration includes performing an auto-configuration of the system upon installation of the network printer, the auto-configuration including configuration of the installable features,

wherein the auto-configuration is capable of being performed independent of input from one or more users at one or more client computers.

22. (original) The method of claim 21, wherein routing a bi-directional notification comprises routing a drive printer event notification to the driver to inform the driver of a configuration change.

23. (original) The method of claim 21, wherein routing a bi-directional notification comprises routing a find next printer change notification to an application to allow the application to monitor and receive configuration changes automatically.

24. (original) The method of claim 21, further comprising implementing a plurality of keywords including a response type keyword for designating a bi-directional response type and a response data keyword for mapping between features of the network printer.

25. (original) The method of claim 21, further comprising providing automatic configuration updates at a global level, at an option level, and at a feature level.

26. (original) The method of claim 21, further comprising implementing independent hardware vendor extensions for enumerating specific features provided by a manufacturer.

27. (original) The method of claim 21, further comprising implementing the bidirectional application program interfaces to provide tools for supporting a get action, a set action, and an enumerate action.

28. (original) The method of claim 21, further comprising using the port monitor for retrieving data from a network printer database and accessing extension files from the printer description files in order to transform the data.

29. (original) The method of claim 28, further comprising using the bi-directional application program interfaces for returning the data retrieved by the port monitor.

30. (original) A computer-readable medium having computer-executable instructions for performing the method recited in claim 21.

31. (currently amended) A method for providing extensibility for a port monitor in order to enable vendors to define new mappings using existing public bi-directional schema and extensions to existing schema, the method comprising:

permitting, upon installation of a network printer, the use of an extension file capable of describing a mapping between bi-directional values and device-specific objects, the extension file configured to seek a current configuration of the network printer; and

allowing implementation of the extension file to facilitate a port monitor response to a bidirectional request,

wherein the extension file is ~~configure~~ configured to provide for auto-configuration of a system, the auto-configuration including configuration of the system to recognize the device-specific objects and current configuration of the network printer,

wherein the auto-configuration is capable of being performed independent of input from one or more users at one or more client computers.

32. (original) The method of claim 31, wherein the extension file is an XML extension file.

33. (original) The method of claim 31, wherein the extension file comprises independent hardware vendor extensions of standard bi-directional schema.